IBM DATA STUDIO ADMINISTRATOR

**Empowering DBAs with Tools
to Manage Data Throughout Its Lifecycle**

CONTENTS

Change is in the air. Whether it's out in the global marketplace or inside your data center, it's here for the duration of the unending storm. And how you respond to complex day-to-day changes can make or break your competitive position.

Speaking of change, you've already transformed your data center with your data management system. You're using it to reduce the cost and complexity of your IT infrastructure, simplify compliance and maximize your core asset — your data. But are you getting the most value from your database and your data? Are you ready to extend the manageability of your database with a new approach to change management? One that will carry your DBAs and your data over the changing tides — without your DBAs getting woozy, your data all wet and your IT budgets sunk?

Well, IBM has the solution for you: A single, integrated data management environment, so you can design, develop, deploy and manage database applications throughout the data lifecycle. And if you're thinking that all data management solutions are about the same, think again. While most offer at least some help for data architects, application developers and database developers, they typically fail to adequately equip the database administrators (DBAs). Yet IBM Data Studio offers capabilities especially designed for DBAs, with an innovative solution — IBM Data Studio Administrator — to help DBAs successfully collaborate across the enterprise and beyond, and manage any type of database change that hits the data center.

This guide serves to show you how DBAs can solve some of the complex challenges associated with your changing databases, while optimizing database operations and ensuring business continuity.

Introduction

In these pages you'll find:

- A broadened view of data management.
- How to increase the value of your data across the entire lifecycle, from data requirements to data retirement.
- How to align IT with business objectives to facilitate collaboration across roles, partners and geographies.
- Ways to accelerate data-driven application delivery to increase developer productivity, software quality and data access performance.
- Why improving problem isolation, performance optimization, capacity planning and workload and impact analysis can increase your ability to meet service-level agreements.
- How you can increase data quality and enterprise consistency via data models that comply with enterprise architecture and corporate standards.
- How to comply with data security, privacy and retention policies by leveraging shared policy, services and reporting infrastructure.
- A set of powerful tools and techniques that will help you facilitate data management for maximum ROI on your valuable data, data center assets and IT resources.
- Links to additional IBM resources that can help your DBAs gain control of their databases.

CIOs can **strengthen competitive advantage** by better managing their core asset: enterprise data.

DBA CHALLENGES   TOOLS AND CAPABILITIES FOR DBA SUCCESS   IBM SOLUTIONS FOR DBAs   RESOURCES

CHANGING TIMES, CHANGING DATABASES

DBAs today face tough challenges — from internal roadblocks such as sudden changes that can affect 24×7 operations to external hurdles such as fluctuating regulations. To make matters worse, heterogeneous environments with complex interrelationships among databases, applications and platforms are often supported by assorted data management tools that don't work well together. This impacts productivity, data integrity, application uptime and much, much more. And whatever the database challenges, it's overwhelmingly about managing the data.

IT organizations are contending with fallout from the rise of business acquisitions and restructuring that requires extensive, complex changes to the database. At the same time, new compliance regulations are hitting IT departments regularly, and require in-depth changes to the data model. New technology architectures and strategies require that DBAs align their data management practices with their changing IT infrastructures.

So DBAs need to constantly manage change — assessing the impact of change, determining the best course of action and then modifying their databases and often moving their data. Or sometimes, even trying to figure out which database changes have taken place. Yet change management processes can be very time consuming and costly, and when structural database changes are performed manually, changes are typically prone to error.

Only 15 percent of CIOs believe that their data is currently comprehensively well managed.

Source: Accenture CIO Data Management Survey 2007

ARE YOU SWEATING THE DETAILS?

Let's face it: DBAs have a lot on their plates. They need to effectively control database performance, but their power to do so has eroded over time as additional layers continue to emerge in the application stack. SQL is generated by frameworks, not programmers. Database connections are managed by systems administrators, not DBAs. And dynamic SQL complicates security management.

Many other qualities of data and demands of managing data can complicate the day-to-day efforts of your DBAs. For instance, DBAs are often unable to gain control of database catalogs when they need them. Most databases don't automatically keep historical information so it can be difficult for DBAs to reconstruct changes that take place. Specifically, locating the objects impacted by database structural changes can be tough, and communicating and migrating them can be arduous or even impossible. And when changes are required, developing and deploying change scripts can be complex and problematic.

MANAGING DATA THE HARD WAY

The diversity of data, databases and data-driven applications in your organization and the complex phases of data management can result in a fragmented infrastructure and highly inefficient data management strategy. You know you need tools to support the different roles and tasks that support your databases, such as design, development and deployment. So like many companies, you probably have a myriad of data management tools from many vendors supporting these different tasks and roles. While each tool focuses on providing clear task-specific value, they fail to provide linkages with the preceding or next phase in the data management lifecycle. The result? Communication breakdown, management problems, data risks and sizeable costs.

DBAs must manage change migration from test to production environments, yet production environments often get out of synch with test environments. Your data architects, DBAs and other members of your cross-functional data management team are unable to share physical data models and communicate through reports, projects and scripts. Another problem with a lack of data management integration involves performance. Database performance issues are particularly difficult to isolate since the problem can be in the application, the application server, the database client, the network, the database server or the operating system. Though each of these layers has performance information, none has the information in aggregate.

Thus, if you're packing a collection of disparate, single-purpose data management products, you're probably struggling to overcome change management and performance challenges, among others, and you're certainly impacting productivity, efficiency and data integrity.
A data management strategy that doesn't focus across the entire data lifecycle or enable different roles to collaborate can limit organizational productivity and effectiveness, diminish quality of service and data governance, and keep cost of ownership high.

78 percent of CIOs want to improve the way they use and manage their data.

Source: Accenture CIO Data Management Survey 2007

DBAs AND THEIR ROLE IN HELPING BUSINESSES THRIVE

The role of IT has evolved from supporting the business to enabling the business, and DBAs are in the thick of the mix of enablers. So DBAs need the right tools and capabilities to carry out required data management responsibilities, especially performance management and change management functions. Because when your databases, applications and data aren't on their A game, your business is impacted, and sometimes severely.

MANAGING CHANGE AND MANAGING YOUR DATABASE

Whether they're upgrading an IBM DB2® database or migrating data between databases, you'd like your DBAs to manage their database changes efficiently, comprehensively, accurately and cost-effectively. Thus, it's important to empower them with a comprehensive database change management solution that will allow them to effectively manage the end-to-end change process.

They'll need the capabilities to change DB2 structures and data more frequently and under tight deadlines. A proven method for modeling, predicting, defining and implementing changes can reduce the potential for error when making changes, and limit the time and cost of the change process. A guided change management process, enabled by a data administration solution, can help DBAs visualize dependencies, generate customizable deployment scripts, and manage schema changes together with object, data and authorization migration.

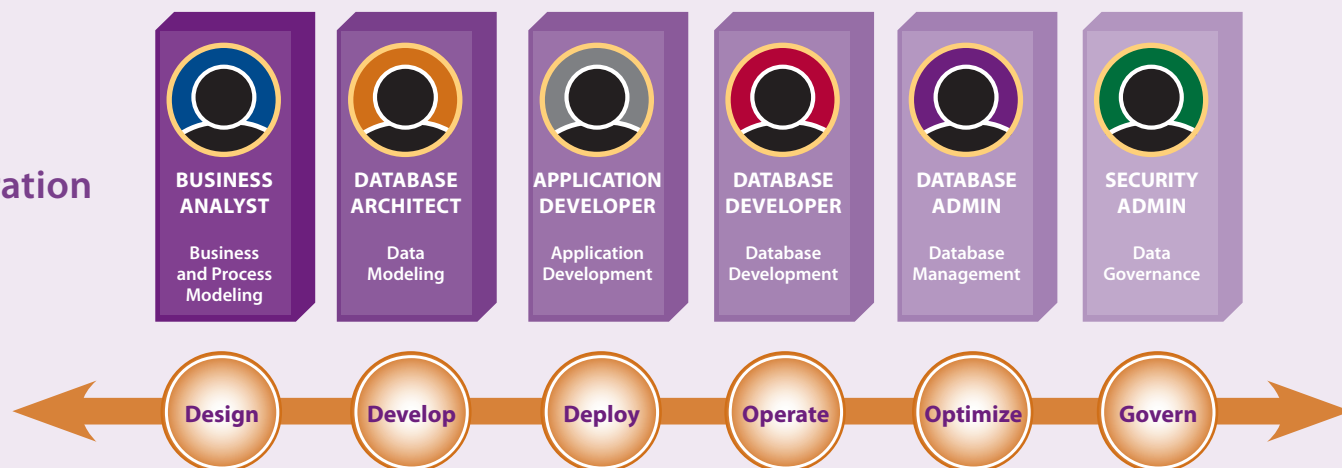## BETTER DATABASE CONTROL FOR A BETTER BUSINESS

When your DBAs gain control of their domains, you gain better control of operations — and your valuable data. By equipping your DBAs with the tools they need to comprehensively manage your databases, they'll gain control over:

- **Applications** — Existing Java™ applications using static SQL, making response time stable, reducing security risks and increasing throughput.
- **Performance** — Performance optimization strategies, which focus on how to optimize database access from the database client rather than only looking within the database engine; plus ready access to information regarding the performance of database servers, application servers, networks and hardware devices.
- **Problem solving** — The ability to aggregate and correlate information for fast problem isolation, not only to, for example, an offending SQL statement, but also to the originating application source.
- **Data** — Correlated and integrated Java code, SQL statements and table information.
- **Database monitoring** — For detecting threshold conditions and alerting the DBA that a problem exists, plus root cause analysis and performance indicators along with recommendations for problem resolution.
- **The entire data lifecycle** — A collaborative data management environment that enables DBAs, architects, developers and others to effectively and comprehensively manage data throughout its lifecycle.

INTEGRATION AND COLLABORATION:
THE KEYS TO CONTROLLING YOUR DATABASES

Businesses need a single, scalable platform to manage data across the lifespan of your data — from design to deletion. You need the integrated solution to support heterogeneous environments that include your databases, applications and data. These tools should facilitate cross-functional collaboration within IT, and across lines of business, various compliance initiatives and disparate skill sets. And they must support the complex interrelationships among functions and roles.

Enabling Collaboration and Integration Throughout the Data Lifecycle

BUSINESS ANALYST	DATABASE ARCHITECT	APPLICATION DEVELOPER	DATABASE DEVELOPER	DATABASE ADMIN	SECURITY ADMIN
Business and Process Modeling	Data Modeling	Application Development	Database Development	Database Management	Data Governance
Design	Develop	Deploy	Operate	Optimize	Govern

By enabling collaboration and integration throughout the data lifecycle, your data platform can deliver important business and IT benefits:

• A shared user interface across tasks makes moving between roles easy and intuitive.

• Sharing metadata, development and design artifacts improves software development alignment, control and efficiency.

• Shared configuration information reduces deployment costs while improving quality of service.

• Aggregated performance information across the application stack enables faster and more effective problem isolation, performance optimization, capacity planning and impact analysis.

• Seamless integration of data management applications enables a smooth transition from logical modeling to physical implementation.

• Holistic monitoring improves your ability to meet service-level agreements.

• Shared policies and services across tools improves security and compliance.

• Shared functions across data servers reduces skills requirements.

INTEGRATED DATA MANAGEMENT FROM IBM

IBM offers an assortment of powerful solutions that enable an integrated data management environment. Today calls for a more sophisticated approach to data management than what's been done in the past: someone doing the modeling, someone writing the code and someone doing the database administration, all independent of one another with no communication among them. Now, in the interest of efficiency, data integrity and other important drivers, you have new tools that offer new capabilities, such as developers understanding more about a database, who can produce efficient SQL and can understand data architecture issues so they can code intelligently and contribute to the database design.

With IBM solutions for DBAs and other key players, you can empower teams to collaborate seamlessly and improve productivity from design to delivery to management — so they can deliver quality service and gain control of their databases.

Whether you're a data architect, developer, tester, DBA or data steward, you can use **IBM Data Studio** to manage information for maximum value throughout the data lifecycle.

DBA CHALLENGES   TOOLS AND CAPABILITIES FOR DBA SUCCESS   IBM SOLUTIONS FOR DBAs   RESOURCES

IBM DATA STUDIO ADMINISTRATOR

IBM Data Studio Administrator is a component of **IBM Data Studio**, which provides an integrated data management environment that offers a comprehensive solution to help you design, develop, deploy and manage database applications throughout the data lifecycle. Other components of IBM Data Studio include:

- **IBM Data Studio Developer** — Provides a complete development and testing environment for building database objects, queries, database logic and pureQuery applications, improving productivity, application performance and resiliency.
- **IBM Data Studio pureQuery Runtime** — Offers an innovative approach to building high-quality, better-performing database applications while greatly improving Java programmer productivity. It supports the development, deployment, management and governance stages of the data lifecycle.

IBM Data Studio Administrator improves productivity and reduces total cost of ownership by facilitating collaboration among DBAs, architects and developers. The solution offers:

- **Improved productivity and reduced deployment costs —** For architects, developers and administrators through a common workspace on the desktop.
- **Better collaboration —** Resulting in enhanced alignment, control and efficiency across teams located across the hall or around the globe.
- **More change functionality —** With the power to view changes, migration objects and authorization, and the ability to undo changes quickly and thoroughly.
- **Greater flexibility —** For how data is preserved during change deployment, with the ability to either store data outside the database or store data inside the database using a shadow table.
  - Improve object migration so objects can be migrated from physical data models, live database connections or scripts.
  - Give DBAs the option to specify masks and ignores to simplify the comparison of models.
  - Improve support for database authorizations to provide options for preserving existing authorizations during changes.
  - Provide restart and partial undo capabilities to correct errors during deployment.

- **Enhanced usability —** For greater DBA productivity when you can guide DBAs through the change management process using visual task-based flows.
  - Simplify command generation in one integrated wizard to support DDL, DCL, DB2 and system commands.
- **Enhanced impact analysis and auditability —** So you can report on the impact of proposed changes to mitigate an otherwise time-consuming process, plus document database changes.

IBM DB2 HIGH PERFORMANCE UNLOAD

IBM DB2 High Performance Unload is a high-speed tool for unloading, extracting and repartitioning data from DB2 databases. It offers:

- Improved performance.
- New extraction options from DB2 backups.
- New repartitioning capabilities.
- Improved DB2 authorization support.
- Multiple output formats and platform support.

The fully integrated nature of IBM Data Studio simplifies collaboration among developers and DBAs. As a direct result of this optimized, collaborative environment, **development time can be slashed by up to 50 percent**.

IBM DB2 PERFORMANCE EXPERT FOR LINUX, UNIX AND WINDOWS

IBM DB2 Performance Expert for Linux®, UNIX® and Microsoft® Windows® provides DBAs in-depth database monitoring, problem isolation and trend analysis. It helps DBAs:

- With new capabilities for end-to-end database monitoring of their business-critical Java applications running against DB2 for Linux, UNIX and Windows — with the innovative Extended Insight Feature.
- Scale up their performance warehouse to capture and retain more performance data, yielding quicker and more accurate trend analysis.
- Extend database monitoring across the database client, the application server and the network, giving DBAs immediate insight into where database workloads, transactions and SQL requests are spending their time.
- Prevent slow-running applications from affecting your business by proactively alerting them to potential problems in the database stack.
- Improve availability of mission-critical database applications through earlier detection of database performance issues.
- Reduce the time and effort needed to isolate the sources of database application performance issues in Java applications that access DB2 data — from days down to minutes.
- Manage applications to meet service-level agreements more easily and effectively.
- Collaborate more efficiently with other IT staff by providing them with additional, useful information.

REVOLUTIONIZING YOUR DATA CENTER

IBM Data Studio software delivers a revolutionary approach to managing data and data-centric applications throughout the lifecycle, from requirements to retirement. With Data Studio, your data architects, developers, testers, DBAs and data stewards can improve productivity, increase quality of service, and leverage greater alignment and collaboration across IT roles through the ability to share policies, models and metadata. And with Data Studio Administrator and other innovative data management tools from IBM, you can empower your DBAs to meet all of their change management and performance management demands — while you can extend the value of your DB2.

Integrated Data Management

Design

Optimize

GOVERN
Standards
Models
Policies

Develop

Operate

Deploy
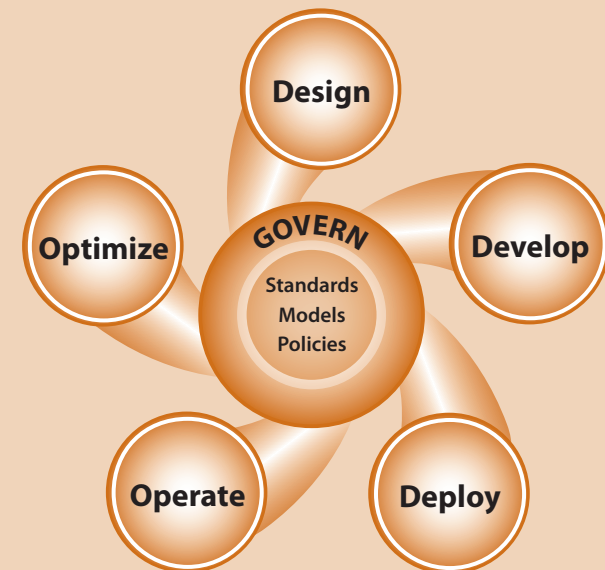
Learn more about how your DBAs can gain control of their databases. Get additional information about important DBA tools, trends and solutions by exploring these resources.

Find out more about IBM Data Studio:

- IBM Data Studio
- IBM Data Studio Administrator
- IBM Data Studio Developer
- IBM Data Studio pureQuery Runtime

See the IBM Data Studio Administrator Webcast:

- Monitoring and managing change for database administration

Try IBM Data Studio:

- Download a free trial version of IBM Data Studio

View the informative article about how Data Studio software can help you get more value from your information and help your team be more productive and efficient:

- IBM Data Studio software: The big picture

See more innovative tools for DBAs:

- IBM DB2 High Performance Unload
- IBM DB2 Performance Expert for Linux, UNIX and Windows
- IBM DB2 tools for z/OS®
- IBM DB2 tools for Linux, UNIX and Windows